

REMARKS

Summary of the Application

Claims 1-12 and 15-34 and 41 are currently pending. Claim 41 is new, and is fully supported by the application a filed. No new matter has been introduced into the application by way of these amendments.

Summary of the Office Action

The Office Action dated January 5, 2007, rejects claims 1, 4-6, 17 and 22 under 35 U.S.C. § 102(c) as being “anticipated” by U.S. Published Patent Application 2002/0098288 (“Kamitani”) in view of WO99/21715 (“McCullough et al.”).¹

Claims 7, 8, 10 and 23-25 are rejected under 35 U.S.C. § 103(a) as being obvious over Kamitani and McCullough et al.

Claims 3, 16 and 19 are rejected under 35 U.S.C. § 103(a) as being obvious over Kamitani and McCullough et al. in view of U.S. Patent 5,380,612 (“Kojima et al.”).

Claim 21 is rejected under 35 U.S.C. § 103(a) as being obvious over Kamitani and McCullough et al. in view of Kojima et al.

Claims 9 and 26-28 are rejected under 35 U.S.C. § 103(a) as obvious over Kamitani and McCullough et al. in view of U.S. Patent 6,007,240 (“Price”).

Claims 2, 12, 30 and 32 are rejected under 35 U.S.C. § 103(a) as obvious over Kamitani in view of McCullough et al.

Claim 34 is rejected under 35 U.S.C. § 103(a) as obvious over Kamitani in view of McCullough et al.

Claims 11, 15, 18, 29 and 31 are rejected under 35 U.S.C. § 103(a) as obvious over Kamitani in view of McCullough et al. and further in view of Kojima et al.

¹ The Office Action uses the term “anticipates.” However, from the context of the rejection, Applicant will address the rejection as if it were an obviousness rejection under 35 U.S.C. § 103(a).

Claims 20 and 33 are rejected under 35 U.S.C. § 103(a) as obvious over Kamitani in view of McCullough et al. and further in view of Kojima et al..

Discussion

As currently pending, claim 1 describes a method of making a heat-sensitive lithographic printing plate precursor comprising the steps of:

- (i) providing a web of a lithographic support having a hydrophilic surface;
- (ii) applying a coating comprising a phenolic resin on the hydrophilic surface of the web;
- (iii) drying the coating;
- (iv) heating the web wherein the temperature of the web is maintained above 150°C during a period of between 1 and 30 seconds; and
- (v) winding the precursor on a core or cutting the precursor into sheets.

Claim 41 includes the same limitations as included in claim 1, with the exception that step (iv) requires the temperature of the web to be maintained above 150°C during a period of between 0.1 and 60 seconds.

The Office Action alleges that the combination of Kamitani and McCullough et al. render the claims obvious. In support of this rejection, the Office Action argues that McCullough et al. provides the following teaching concerning the heating of the Kamitani precursor:

While McCullough et al. do suggest an upper [temperature] limit, said limit is qualified as being merely a 'guide' that McCullough et al. merely 'favor' (page 7, lines 24-25). McCullough et al. clearly teach, and even *encourage*, using trial and error to determine the heating temperature (page 7, lines 23-24). This clearly would not prohibit or prevent one having ordinary skill in the art from trying, though routine experimentation, a higher temperature.

Regardless, McCullough et al. is relied upon for teaching that for higher temperatures, lower holding times are desired, and for teaching that the temperature and hold times are result-effective variables that the reader is encouraged to vary. Hence, the motivation is present for one having ordinary skill in the art to use routine experimentation to determine the optimal temperature and hold times.

Further McCullough et al. chose the specified temperature 'guide' because of the 'criticality' of the low times that would be required at high temperatures (page 7, lines 17-23). It is well within the scope of routine experimentation to

incorporate new technologies and/or knowledge to overcome the ‘criticality’ of the lower heating times required by the higher temperatures.”

See Office Action, pp. 13-14 (emphasis in original).

Applicant respectfully submits that the analysis set forth in the Office Action fails to give appropriate weight to the clear and unambiguous temperature boundary established by the disclosure and teaching of each reference. It is respectfully submitted that these boundaries are more than simply “guides,” teaching instead the existence of an upper temperature ceiling that cannot be exceeded without adversely affecting performance. There is thus no support for the obviousness rejection in the absence of hindsight.

Kamitani, for example, teaches one skilled in the art to not exceed 140°C because “when the final temperature reached in either the hot air drying device 20 or the far infrared radiation heating device 50 was **140°C** or more, **the developability deteriorated**.” When this temperature exceeded **145°C**, the “**developing was poor**.” *See Kamitani ¶ [0087] (emphasis added).* Kamitani indicates that this teaching is supported by the data of Table 1. Table 1 of Kamitani shows that precursors having an exit surface temperature of 142°C had faults with respect to developability and overall quality, while precursors having an exit surface temperature of **153°C** had **unsatisfactory developability and overall quality**. *See Kamitani, Table 1 (entries for 141°C and 152°C)(emphasis added).*

When a prior art reference concerning a printing plate precursor states that the developability of that precursor *deteriorates* when the plate is heated above 140°C, and was **poor** and **unsatisfactory** at or above 145°C, the teaching provided thereby is clear and unambiguous—one skilled in the art should not heat a precursor to these temperatures (and should certainly never exceed these temperatures) because the precursor will not function for its intended purpose. No one skilled in the art would desire a precursor that cannot be properly developed, *i.e.*, whose developability is “compromised,” “poor” or “unsatisfactory.” Yet, this is precisely what Kamitani teaches—when one heats a precursor above 145°C, a poor and unsatisfactory material results. Thus, there is no reasonable expectation of success if one were to heat a precursor at 140°C. Again, the clear and unambiguous teaching of Kamitani is that a precursor should not be heated to a temperature exceeding 140°C, and certainly not in excess of 145°C.

Seeking to overcome the limitations of Kamitani, the Office Action uses McCullough et al. to allegedly teach that the time and temperature of a heating step may be varied:

[McCullough et al.] teach the desire and ability to vary, by trial and error, the time and temperature settings to achieve desired sensitivity in the printing plate precursors. McCullough et al. also teach that when the printing plate precursors are heated to a higher temperature, the precursors should be held at that temperature for a shorter time. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention, through routine experimentation, to maintain the temperature of the precursors above 150°C for a period of between 1 and 30 seconds in order to achieve a desired sensitivity.

See Office Action, p. 3 (citations omitted).

While the Office Action may desire to lift a portion of the alleged teaching provided by McCullough et al., it may only do so if the portion does not distort the teaching of the reference as a whole. Indeed, it is well established that a reference must be considered for all that it teaches. In this case, even if one assumes that McCullough et al. teaches one skilled in the art to vary the time and temperature during heating, the boundaries taught by that very same reference (as well as those taught by Kamitani) preclude it from teaching the invention as claimed.

Specifically, Kamitani unambiguously teaches that heating at a temperature of 140°C creates undesirable problems in the final product, while heating at 145°C provides an unsatisfactory product. Thus, even if one were to accept the proposition that McCullough et al. teaches one to vary the temperature of Kamitani, one skilled in the art would never vary the temperature above 140°C (and certainly not over 145°C) because Kamitani teaches that an unsatisfactory product will result. Yet, this is precisely an aspect of Applicant's claimed method.

For at least these reasons, Applicant submits that all of the pending claims are allowable over the prior art of record.

Further, and in connection with the timing aspect of precursor heating, it is clear that McCullough et al. teaches that a *minimum of four (4) hours of treatment must be used in all cases*:

The time for the heat treatment can also be determined by trial and error. Generally, the lower the temperature for the heat treatment, the longer the time should be. *In all cases however we favor carrying out the heat treatment for at least 4 hours; and preferably for at least 24 hours and most preferably for at least 48 hours, especially in the case of the lower temperatures.*

See McCullough et al., pp. 7-8 (*emphasis added*). The lowest heating time taught by McCullough et al. is, therefore, 4 hours. Thus, a fair reading of McCullough et al. based on its plain language teaches that any variation in the time of heating should occur between 4 and 48 hours. This is markedly different than the heating time recited in the claims, which is in the minute range. Moreover, and with regard to temperature, McCullough et al. teaches that the temperature of the precursor (after cutting into sheets) *should not exceed 90°C*, with 50°C-60°C being the most favored. There is no basis other than hindsight to conclude that McCullough et al. would in any way suggest that the precursor temperature be heated above 90°C, let alone above 150°C—an increase of 66% over the maximum disclosed temperature of 90°C. See McCullough et al., p. 7 (*emphasis added*).

Thus, even if the references are combined, the inventive method would not be provided, the claimed method including, *inter alia*, the heating conditions required by step (iv). Instead, Kamitani clearly and unambiguously teaches one skilled in the art to *not* heat the precursor to the claimed temperature, and indeed teaches that temperatures less than 140°C must be used in order to avoid problems with developability that arise when the precursor is heated to a temperature of above 140°C. This upper limit on temperature taught by Kamitani is a hard boundary that, according to the teaching of this reference, cannot be exceeded without providing an inferior product. Clearly, one skilled in the art would not have a reasonable expectation of success if following the approach suggested in the Office Action. Moreover, Kamitani fails to teach the timing aspect of the claimed method.

McCullough et al. also fails to teach one skilled in the art to exceed the temperature limit set by Kamitani, or to limit the heating time to that which falls within the claimed range. McCullough et al. favors an upper limit of 90°C on precursor temperature, but at the same time prefers a 50°C-60°C temperature. Indeed, the temperatures referenced in the McCullough et al. examples support this teaching. It should be appreciated that the temperatures in the McCullough et al. examples do not refer to a precursor temperature, but instead to the temperature of the “hotbox oven.” For example, Example 2 uses a hotbox oven

at 110°C and 140°C for certain time periods, but provides no information as to the temperature of the precursor *per se*. See McCullough *et al.*, Example 2.

Further, McCullough *et al.* teaches that “*fi[n] all cases however we favor carrying out the heat treatment for at least 4 hours . . .*” See McCullough *et al.*, pp. 7-8 (*emphasis added*). Absent hindsight, this cannot be rationalized to include the claimed time period which ranges in the minutes—indeed the reference teaches what it says—shortening the heating period from several hours to minutes simply cannot be found to be taught by this passage. To assert otherwise is a conclusion driven by solely hindsight.

In addition, McCullough *et al.* does not teach or suggest the heating of its materials on a web. On the contrary, McCullough *et al.* teaches that the heating must be undertaken only *after* the precursors are cut into sheets. See, e.g., McCullough *et al. examples*. This, of course, is contrary to both Kamitani and to the claimed invention.

Thus, Kamitani clearly and unambiguously teaches precursor temperature limits that cannot be exceeded without adversely affecting a critically properly of the precursor, *i.e.*, its developability and overall quality. This temperature limit is below that recited in the claims. Moreover, McCullough *et al.*, to the extent it is at all relevant, teaches that the temperature of the precursors after they are cut into sheets should not exceed 90°C. Thus, even of one assumes that Kamitani could be combined with McCullough *et al.*, the alleged variability in time and temperature would not overcome the time and temperature boundaries clearly established by both Kamitani and McCullough *et al.* when taken as a whole—a boundary that does not reach, *inter alia*, the heating limitation set forth in the inventive claims. None of the cited art teaches the temperature or timing limitations recited in the claims, and the only manner in which the claimed invention can be derived is via hindsight. As such, Applicant submits that the claims are not obvious over the cited prior art. Withdrawal of the rejection of claims 1, 4-6, 17 and 22 over this combination is, therefore, respectfully requested.

As each additional rejection entered in the Office Action relies on the combination of Kamitani and McCullough *et al.*, and the additional prior art does not overcome the fatal deficiencies in these two references, withdrawal of the additional rejections entered against the remaining dependent claims is also proper, and respectfully requested. See *Office Action*,

pp. 4-12. Finally, new claim 41 is also patentable over the prior art of record, for the reasons set forth above.

Conclusion

Applicant respectfully submits that the patent application is in condition for allowance. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,

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